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REMARKS

Claims 1-9 are pending in the instant application. Claims 1-9 have been rejected. Claims 1 and 2 have been canceled. New claim 10 has been added. Claims 3, 4, 5, 6, 7 and 8 have been amended. Support for these amendments is provided in the specification at page 1, lines 12-18; page 3, lines 24-25; page 5, lines 29-31; page 6, lines 20-27; and claims 1 and 2, now canceled. No new matter is added by these amendments. Reconsideration is respectfully requested in light of these amendments and the following remarks.

I. Rejection of Claim 5 under 35 U.S.C. 112, second paragraph

Claim 5 has been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner suggests that compositions of the trade name Monel alloys are variable and diverse and it is not clear which Monel alloy is required by the claims. Further, the Examiner suggests that trade names should not be used in

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claim language since their scopes are indefinite because the compositions may change.

Applicants respectfully traverse this rejection.

MPEP § 2173.02 is quite clear; definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (A) the content of the particular application disclosure;
- (B) the teachings of the prior art; and
- (C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

The other metals from which the blade-shaped substrate base is comprised and hardness which it must exhibit would make clear to one of skill in the art upon reading this disclosure which Monel alloys could be used in the present invention. Thus, further clarification in the claims should not be required.

However, in an earnest effort to advance the prosecution of this case, Applicants have deleted this term from claim 5.

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Withdrawal of this rejection under 35 U.S.C. 112,
second paragraph is respectfully requested.

II. Rejection of Claims 1 and 4-6 under 35 U.S.C. 102(b)

Claims 1 and 4-6 have been rejected under 35 U.S.C.
102(b) as being anticipated by Roberts (European Patent
Application 0 042 586). The Examiner suggests that Roberts
discloses coating a beveled carbon steel blade with a hard
metallic coating material of over 70 Rockwell in a
thickness of preferably from about 0.0005 to 0.0007 inches.

Applicants respectfully traverse this rejection.

Teachings of Roberts relate to a serrated slotted or
unslotted metal perforating blade for cutting plastic
material. Contrary to the Examiner's suggestion, Figures
5-7 do not show a beveled carbon steel blade but rather an
enlarged view of one of the teeth of this perforating blade.
This serrated blade designed to cut through or perforate
plastic materials is completely different to the doctor or
coater blades of the present invention which are used, not
to cut, but to evenly apply coating or ink to paper or
board.

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Further, as shown in Figure 5, the hard substance coating in Roberts is applied only to the flat side of the blade, not to the beveled edges of the teeth.

In contrast, in the doctor or coater blade of the present invention, the protective layer is applied to the edge of the blade. See specifically Figure 2.

Accordingly, in an earnest effort to advance the prosecution of this case, Applicants have canceled claims 1 and 2 and added new claim 10 which is drawn to a friction resistant coater or doctor blade for applying inks and coatings to paper and packaging comprising a blade-shaped substrate base with an edge which allows coating or ink to be evenly applied to paper or board and a protective layer applied to at least the edge of said blade-shaped substrate, said protective layer heat treated after application to at least the edge of the blade-shaped substrate base to provide a Rockwell C hardness of greater than 70. Support for claim 10 is provided throughout the specification and in particular in claims 1 and 2, now canceled and page 1, lines 12-18; page 3, lines 24-25; page 5, lines 29-31; and page 6, lines 20-27.

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This amendment clearly distinguishes the blade of the present invention used to evenly coat paper and board with inks and coatings from the perforating serrated blade of Roberts.

Since Roberts does not teach a coater or doctor blade with a blade-shaped substrate base with an edge providing the capability of evenly applying a coating or ink to paper or board this reference cannot anticipate the claims as amended.

Withdrawal of this rejection under 35 U.S.C. 102(b) is therefore respectfully requested.

III. Rejection of Claims 1-2 and 5-8 under 35 U.S.C.

102(b)

Claims 1-2 and 5-8 have been rejected under 35 U.S.C. 102(b) as being anticipated by Hough (U.S. Patent 3,974,564). The Examiner suggests that Hough discloses a beveled or square carbon steel blade with a hard coating of 60-75 Rockwell C. Further, the Examiner suggests that case hardening involves heat treating.

Applicants respectfully traverse this rejection.

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Teachings of Hough relate to a surface hardened steel cutting blade adapted to be used in shear against another hardened blade. Accordingly, this cutting blade and its design as well as the purpose for hardening this cutting blade to reduce chipping upon the return stroke between two hardened cutting edges of cutting blades of shears are completely different to the coater or doctor blade of the present invention used to apply coating and inks to paper and boards.

Accordingly, in an earnest effort to clearly distinguish the present invention from teachings such as Hough, Applicants have amended the claims. Specifically, claims 1 and 2 have been canceled and the subject matter has been represented in new claim 10 which states that the coater or doctor blade comprises a blade-shaped substrate base with an edge which allows coating or ink to be evenly applied to paper or board and a protective layer applied to at least the edge of said blade-shaped substrate. Since Hough et al. do not teach a blade with these capabilities, this reference cannot anticipate the claims as amended.

Withdrawal of this rejection is therefore respectfully requested.

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IV. Rejection of Claims 1-2 and 5-8 under 35 U.S.C. 102(a)

Claims 1-2 and 5-8 have been rejected under 35 U.S.C. 102(a) as being anticipated by White (U.S. Patent 6,633,739). The Examiner suggests that White discloses a beveled or square, carbon steel or stainless steel blade with a hard coating of up to 80 Rockwell C and a thickness of 0.1 to 4 microns disposed on the blade at elevated heating temperatures.

It is respectfully pointed out, however, that White et al. published June 19, 2003 after the October 20, 2000 priority date of the instant applications. Further, it was filed December 17, 2001, again after the priority date of the instant application.

Thus, the teachings of White do not constitute a prior art teaching with respect to the instant invention.

Withdrawal of this rejection is therefore respectfully requested.

V. Rejection of Claims 1-2, 5 and 8 under 35 U.S.C. 102(b)

Claims 1-2, 5 and 8 have been rejected under 35 U.S.C. 102(b) as being anticipated by Jones (U.S. Patent 3,944,443). The Examiner suggests that Jones discloses

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coating steel blades with a hard coating of up to 80
Rockwell C.

Applicants respectfully traverse this rejection.

In the present invention, a protective layer is
applied to the metal substrate base and then heated to
increase its hardness.

In contrast, Jones teaches ultra high temperature
plasma gas reactions with various metal compositions to
form extremely hard surfaces. Thus, the hardened surface
of Jones is not a separate protective layer applied first
to the substrate, but rather results from treating the
metal substrate itself. Further, while Jones teaches at
col. 4, lines 16-20 that a thin layer of boron nitride is
on the metal surface, this layer results from employing
plasma containing 10 volume % boron trifluoride and 80
volume % nitrogen "in a reaction" with T1 tool steel. Thus,
this layer still results from a reaction with the metal
substrate upon heating.

Accordingly, the teachings of Jones are quite
different to the present invention wherein as taught at
page 6, lines 14-16, of the instant specification the

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protective layer does not intermingle with the substrate material of the blade upon heat treatment.

In an earnest effort to clearly distinguish the present invention from prior art teachings such as Jones, Applicants have amended the claims to state the protective layer is heat treated after application to at least the edge of the blade-shaped substrate base to provide a Rockwell C hardness of greater than 70. Since Jones does not teach methods wherein a protective layer is first applied to a metal substrate and then heat treated, this reference cannot anticipate the claims as amended.

Withdrawal of this rejection is therefore respectfully requested.

VI. Rejection of Claim 1 and 5 under 35 U.S.C. 102(b)

Claims 1 and 5 have been rejected under 35 U.S.C. 102(b) as being anticipated by Wright (U.S. Patent 6,176,867). The Examiner suggests that Wright discloses coating a stainless steel blade with a hard coating of 80-90 Rockwell.

Applicants respectfully traverse this rejection.

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Wright teaches a reusable aortic punch comprising a punch knife and die. The punch knife cuts a circular hole through the walls of the aorta or other tissue of patient.

In contrast, the present invention is a coater or doctor blade used to evenly apply inks or coating to paper or board.

In an earnest effort to advance the prosecution of this case and to clearly distinguish the present invention from teachings such as Wright, Applicants have canceled claims 1 and 2 and added new claim 10 drawn to a friction resistant coater or doctor blade for applying inks and coatings to paper and packaging comprising a blade-shaped substrate base with an edge which allows coating or ink to be evenly applied to paper or board and a protective layer applied to at least the edge of said blade-shaped substrate, said protective layer heat treated after application to at least the edge of the blade-shaped substrate base to provide a Rockwell C hardness of greater than 70. Support for claim 10 is provided throughout the specification and in particular in claims 1 and 2, now canceled and page 1, lines 12-18; page 3, lines 24-25; page 5, lines 29-31; and page 6, lines 20-27.

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This amendment clearly distinguishes the blade of the present invention used to evenly coat paper with inks and coatings from the aortic hole punch of Wright.

Since Wright does not teach a coater or doctor blade with a blade-shaped substrate base with an edge providing the capability of evenly applying a coating or ink to paper or board this reference cannot anticipate the claims as amended.

Withdrawal of this rejection is therefore respectfully requested.

VII. Rejection of Claims 1-9 under 35 U.S.C. 103(a)

Claims 1-8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Lindblad (U.S. Patent 4,970,560).

Claims 3 and 9 have also been rejected under 35 U.S.C. 103(a) as being unpatentable over Lindblad (U.S. Patent 4,970,560) as applied to claims 1-8 and further in view of Calnan (U.S. Patent 3,490,314).

The Examiner suggests that Lindblad discloses plating a carbon steel blade with nickel-phosphorus of a thickness of about 5 microns and then heat treating to increase hardness of the coating to a hardness of 68-70 Rc.

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The Examiner suggests that Calnan discloses that hard nickel-phosphorus coatings on blades can be deposited either electrolytically or electrolessly.

Applicants respectfully traverse this rejection.

As discussed in detail in Sections III-IV, *supra*, the claims have been amended to state that the coater or doctor blade of the present invention applies inks and coatings to paper and packaging and comprises a blade-shaped substrate base with an edge which allows coating or ink to be evenly applied to paper or board and a protective layer applied to at least the edge of the blade-shaped substrate.

In contrast, Lindblad et al. teaches a coating process for a steel cleaning blade resulting in a microporous surface while Calnan teaches a process for producing a cutting edge.

Neither of these references teach or suggest a blade-shaped substrate base with an edge which allows coating or ink to be evenly applied to paper or board as claimed.

Thus, since neither of these references alone, or in combination teach or suggest all the limitations of the claims as amended, this combination of references cannot render obvious the instant claimed invention.

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Withdrawal of this rejection is therefore respectfully requested.

VIII. Rejection of Claims 6-7 under 35 U.S.C. 103(a)

Claims 6-7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (U.S. Patent 3,944,443). Jones discloses coating steel blades with a hard coating of up to 80 Rockwell C. The Examiner as acknowledged that Jones differs from the invention of claims 6 and 7 in that Jones does not specify using beveled or square edge blades. However, the Examiner suggests that Jones does disclose using their process on blades of various shapes and that beveled or square edged blades are standard in the art. Thus, the Examiner suggests that it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the process of Jones to beveled or square edged blades.

Applicants respectfully traverse this rejection.

MPEP 2143.03 and the case law are clear; if an independent claim is unobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

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Claims 6 and 7 have been amended to depend from newly added claim 10. As discussed in Section V, claim 10 states that the protective layer is heat treated after application to at least the edge of the blade-shaped substrate base to provide a Rockwell C hardness of greater than 70. This claim limitation of the present invention is clearly different from Jones which teaches ultra high temperature plasma gas reaction with various metal compositions to form extremely hard surfaces. No where does Jones teach or suggest first applying a protective layer to a metal substrate and then heat treating to harden the protective layer.

Accordingly, Jones does not teach or suggest all the limitations of the claims as required to render the instant claimed invention obvious. See MPEP 2143.

Withdrawal of this rejection is therefore respectfully requested.

IX. Rejection of Claims 1-9 under 35 U.S.C. 103(a)

Claims 1-9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Calnan (U.S. Patent 3,490,314). The Examiner suggests that Calnan discloses plating a low

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carbon steel blade or stainless steel blade with nickel phosphorus of a thickness of up to 0.005 inches and then heat treating to increase hardness of the coating.

Applicants respectfully traverse this rejection.

As discussed in Section VII, supra, Calnan teaches processes for producing a cutting edge.

In contrast, the claims as amended are drawn to a coater or doctor blade comprising blade-shaped substrate base with an edge which allows coating or ink to be evenly applied to paper or board.

Nowhere does Calnan teach or suggest producing a blade with the capability of evenly applying a coating or ink to paper or board.

Accordingly, since this reference does not teach or suggest all of the limitations of the claims as amended, it cannot render obvious the instant claimed invention.

Withdrawal of this rejection is therefore respectfully requested.

X. Conclusion

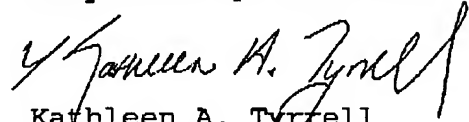
Applicants believe that this submission overcomes all pending rejections in this case and comprises a full and

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complete response to the Office Action of record.

Accordingly, favorable reconsideration and subsequent allowance of the pending claims is earnestly solicited.

Respectfully submitted,


Kathleen A. Tyrrell
Registration No. 38,350

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LICATA & TYRRELL P.C.
66 E. Main Street
Marlton, New Jersey 08053

(856) 810-1515